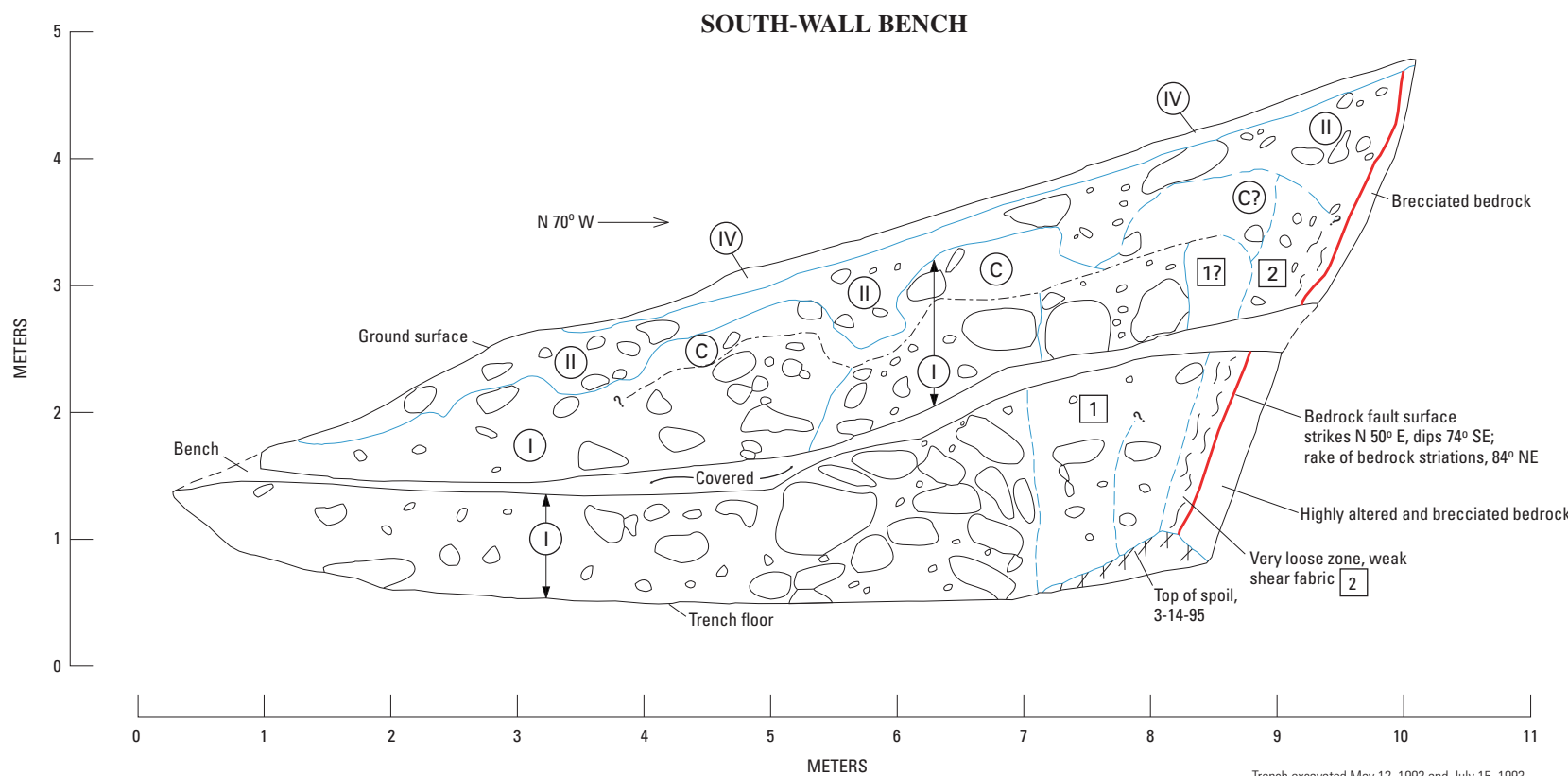


#### DESCRIPTION OF MAP UNITS

- IV **Colluvium and eolian silt**—Sandy and silty gravel, light-yellowish-brown (10YR 6/4) to very pale brown (10YR 7/3), massive, less than 40 cm thick. Unit is generally poorly sorted, matrix supported, and contains angular to subangular clasts of dolomite from the Middle and Upper Cambrian Bonanza King Formation that compose 50 volume percent of unit in north wall of trench and 10 volume percent of unit in south wall. Boulders more than 1 m in diameter are present on surface. A weak carbonate soil (CaCO<sub>3</sub> stage I morphology) formed on unit, and thin carbonate coats formed on bottoms of clasts; clasts near colluvium-bedrock contact have thick carbonate pendants. Desert pavement on surface is composed primarily of dolomite from bedrock exposure at west end of trench, and rest of pavement consists of altered dolomite from fault zone, rubble from underlying carbonate soil horizon, and minor quartzite. Silt matrix in A soil horizon below pavement contains abundant carbonate pisoliths, as much as 1 mm in diameter. Contact with unit II in south wall is clear but irregular and is marked by a textural change; contact with unit III in north wall, which is less distinct, is defined by changes in gravel composition and soil development.
- III **Colluvium and alluvium**—Sandy and silty gravel, very pale brown (10YR 7/3), massive, as much as 100 cm thick. Unit, which is present only in north wall of trench, generally consists of poorly sorted, matrix-supported pebble to cobble gravel with only a few boulders; approximately 10 to 25 volume percent of gravel is composed of angular to subangular clasts of Bonanza King Formation and Lower Cambrian Zabriskie Quartzite in about equal amounts. A moderate carbonate soil (CaCO<sub>3</sub> stage I+II morphology) is developed on unit, and gravel throughout soil generally has thin carbonate coatings that thicken with depth. Sample TL-33 yielded an age of 5.5–10 ka (J.B. Paces, written commun., 1995; see table 38). Lower contact of unit is defined by a change in texture and a distinct stoneline. Unit III? rests on bedrock or against fissure fill 2.

- II **Colluvium?**—Silty and sandy gravel, very pale brown (10YR 7/3), massive, 20 to 70 cm thick. Unit consists of approximately 25 to 50 volume percent angular to subangular gravel, with clasts composed of approximately 60 volume percent Zabriskie Quartzite. Contact with unit I is sharp and distinct but irregular.
- 2 **Fissure fill**—Gravelly sand to sandy gravel, very pale brown (10YR 7/3), massive but with weak shear fabric and some vertically oriented clasts. Unit contains clasts of Zabriskie Quartzite and Bonanza King Formation in a loose sandy matrix; north wall also contains clasts of laminar silica and carbonate. Unit is overlain by unit II on south wall and by unit IV on north wall.
- IC **Colluvium**—Sandy-cobble gravel, very pale brown (10YR 7/3), massive, as much as 30 cm thick. Unit occurs only in north wall of trench and appears to be similar to unit I, except that it contains much less boulders. Gravel is clast supported, angular to subangular, with clasts composed of 60 volume percent Zabriskie Quartzite and 40 volume percent Bonanza King Formation. A buried soil in unit has CaCO<sub>3</sub> stage II+ morphology (thick pendants on bottoms of clasts). Some weak gypsum accumulation is also present, with crystals as much as 3 mm long.
- I **Fissure fill**—Sandy gravel, very pale brown (10YR 7/3), massive. Unit consists of randomly oriented clasts of Zabriskie Quartzite and Bonanza King Formation in a loose sandy matrix. Unit is overlain by unit IC in north wall of trench and is overprinted by silica and carbonate accumulations in south wall.
- I **Alluvium**—Sandy-boulder gravel, very pale brown (10YR 7/3), massive, more than 1.7 m thick. Unit consists of angular to subangular, clast-supported gravel, with some boulders as much as 75 cm in diameter. Gravel in upper 0.5 m of unit is composed of approximately 65 volume percent Zabriskie Quartzite and 35 volume percent Bonanza King Formation, and in lower part of approximately 95 volume percent Zabriskie Quartzite. A buried soil is preserved in unit, and silica in lower 1 m of soil has formed a weak duripan. Upper contact with unit IC (stas. 2–4 m, north wall of trench) is delineated by a distinct stoneline with thick carbonate rinds and pendants.
- BR **Bedrock (Bonanza King Formation)**—Highly resistant, light- to dark-gray, brecciated dolomite; unit forms a low escarpment (25–50 cm high) at west end of trench. In north wall of trench, bedrock is highly fractured, with joint sets near fault striking approximately north-south and east-west and spaced about 15 cm apart. Alteration of dolomite (clayey texture and oxidized color) is evident in south wall adjacent to fault. In north wall, bedrock is covered with pedogenic carbonate and silica to about 3-m depth, below which bedrock is highly polished and exhibits nearly vertical slickensides.

- **Fault or fracture**—Solid where clear and distinct, dashed where approximately located
- **Combined lithologic-unit/soil-horizon boundary**—Solid where clear and distinct, dashed where approximately located or gradational
- - - **Soil-horizon boundary**—Not all are shown
- III **Lithologic unit**
- C **Horizon of silica and carbonate accumulation with CaCO<sub>3</sub> stage II+ morphology**
- **Cobbles and boulders**
- **Clasts of laminar silica and carbonate**
- **Location of sample for age determination**—Number refers to sample listed in table 38



Trench excavated May 12, 1993 and July 15, 1993  
Logged by Ralph E. Klinger, Lucille A. Pietry, and  
Larry W. Anderson June 22, July 16–21, and  
November 17, 1993. Revised by Larry W. Anderson  
June 2, 1994 and March 14, 1995. Location of  
trench shown on figures 46 and 48

## PLATE 21. LOG OF TRENCH BMT-2